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## THE WATER WORKS SUPERINTENDENT<sup>1</sup>

BY EDWARD BARTOW<sup>2</sup>

The duties of water works superintendents or managers are so varied that special rules cannot be made to fit all cases. Superintendents of large plants must have many assistants and their work must be primarily that of executives. They must have an accurate general knowledge of the work of the various divisions of water works operation, but they rely on specialists to take immediate charge of the various divisions. On the other hand, superintendents in charge of small plants must take responsibilities for all kinds of work in the plants over which they have control.

Certain duties of water works superintendents again vary in form depending upon whether the plant is owned by a company working under a franchise or whether it is a municipally owned plant operating under the direction of the city government or under a special commission.

In both large and small plants, privately or municipally owned, the primary object of the water works superintendent is to obtain an abundant supply of pure water for all purposes, at all times, and at reasonable rates.

The duties of the superintendent's office of the large water works includes divisions of engineering, records and revenue; and may be sub-divided farther as, for example, into receipt and storage of supplies, pumping, purification and quality control, distribution, extension of system, repairs, maintenance, service connections, meters, accounts, revenue control, applications, extension of customers, consumers accounts, collection of rentals, information, complaints and purchases. Certainly a variety of duties to be under the control of an executive and his assistants or to be under the control of one superintendent in a small plant.

<sup>1</sup>Presidential Address presented before the Philadelphia Convention, May 15, 1922.

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Of primary importance is a complete record of all constructions and all installations. I have seen some small plants in which the records were all in the brain or memory of one man, either because of his inability to keep records or under the mistaken idea that his position would be permanent because no one else could take his place. Under such conditions the reckoning comes for example when an accident occurs that would not have happened or would have been less serious if shut off valves could have been found or possibly when the plant is inspected and no records found. As soon as possible such a man is replaced and someone put in who can and will keep records. Records are of advantage to the man himself in enabling him to serve more efficiently to the board under which he works, when questions of policy have to be decided or for the preparation of the annual budget. They are of special advantage to his successor, who must eventually come, and finally, and perhaps most important, they are of advantage to the people in that they are insured successful and continuous service.

Records, of course, will be of different character and different degrees of completeness. Attempts to set standards are not entirely successful, but there is a certain similarity that allows modifications for special cases, according to the size and conditions of the various plants. Any superintendent who does not have complete and accurate records of locations of mains, valves, hydrants, check valves, etc., should immediately take steps, employing additional help if necessary, to put all of these items on record. There should be complete records of income and outgo. All receipts and expenditures should be carefully accounted for. A carefully kept financial statement appeals to boards who must make appropriations. These appropriations are made with greater understanding and liberality than if an indefinite sum for an indefinite purpose is requested.

Water is an important food and responsibility for its purity has been delegated to the control of state, national and municipal boards of health. A wise superintendent coöperates in every possible manner with the boards of health. One of the best means of coöperation is to support the boards of health in obtaining adequate appropriations and competent personnel.

An efficient board of health can more easily aid the superintendent in obtaining water of high quality. All purification plants for example should be under chemical and bacteriological control at the plant. A board of health laboratory will check the work of the

local laboratory and coöperate in making and keeping the water supply pure. The representatives of the board of health should be looked upon as consultants and advisors, not as policemen.

Many water works superintendents, as individuals, through the Illinois Water Supply Association and its successor, the Illinois Section of the American Water Works Association, were and are of great assistance to the Illinois State Water Survey. As the Water Survey was strengthened by the assistance of the Association, the superintendents in turn received more and better advice and aid from the State Water Survey. The survey has never exercised police power.

The superintendent must maintain coöperation between the water department and the fire department. The fire department is responsible for the extinguishing of fires but is powerless without an abundant supply of water. Preparations to furnish an abundant supply must be included in the plans of a water works system. Few outside persons realize the large part of the total investments in a well designed water works that is required solely to meet the fire demand. The mains must be of sufficient size, proper cross connections must be installed and cut off valves must be properly distributed.

The reservoir must be kept full, with pumping engines in first class condition and all employees of the department ready to assist in case of fire. At many plants a representative of the water department is present at every fire. In case of a second alarm the employees have their special stations. The superintendent goes to the pumping station, the assistant superintendent goes to the fire and other men with automobiles and tools are ready on call in case of breakage of a main or other accidents, so that the service may be interrupted for the shortest possible time. Each man has his place and each knows where the others may be found.

The underwriters in their examination of water plants notes arrangements of this kind and it serves the public by giving it better rates for fire insurance.

In his relations with the public the superintendent must be a diplomat. Nothing should be done, no action taken that will offend the public people, who are directly or indirectly his employers. He must at all times be courteous, and moreover make his assistants courteous. He must see the viewpoint of the other fellow and when complaints are made must do his utmost to remedy any ills, whether real or imaginary.

In order to have satisfactory relations with the public, the relations of the employer and employees must be most cordial and there should be mutual confidence. The superintendent enforces discipline, but in a fair and reasonable manner. There must be an endeavor to serve each other, the public and, in the end, themselves.

All reasonable requests from the public should be granted. If these are unreasonable, the public is entitled to know the reason. It is far better, when necessary to refuse a request, to do so in such a way that there is a satisfied rather than a dissatisfied client. Under such circumstances the company or the department will have the backing of the people.

By various means, the water works superintendent should keep the department before the public. He should remember, first of all that the best advertising is good service.

With good service as a basis, he may get the water department before the public by the publication of readable annual reports, pamphlets on special subjects, by furnishing reading matter or placing formal advertisements in the newspapers.

Mr. S. C. Hadden in our own Journal has made some very good suggestions to members of the Association, concerning publicity. He suggests that the annual report should contain fewer statistics and more readable accounts of the activities of the department, including perhaps special reports made by outside experts, special study and tests by departmental employees, description of problems presenting special difficulties and having somewhat spectacular features, photographs of work finished and under construction, the discussion of the use and abuse of the water system in the home. Matters of this kind will make a report more readable and instructive and would develop the citizens' interest in and appreciation of the water works.

In the interim between annual reports, pamphlets on special topics instructive to readers could be prepared on such subjects as the proper reading of water meters and the making and care of lawns.

The newspapers will accept articles written in popular style. Newspaper editors are willing to publish technical information if it possesses news value. Such use of the newspaper furthers friendly relations between the editor and the water officials. Formal advertising also may be used, either to increase the amount of water sold or to build up good will.

The superintendent should be a member of the local chamber of commerce or commercial club and take part in work for civic improvement. He should be a member of local associations to show his interest in the welfare of the community. He should become identified with state or national water works associations, and should receive the support of his trustees or board in attending these meetings and wherever possible, should see that the board members also attend the convention.

When the superintendent attends association meetings he should not be a mere listener. He should prepare and present papers or, by taking part in discussions, tell his own experiences. The description of the study and solution of a problem at one plant would be advantageous to all his fellow superintendents.

Several superintendents with similar problems might work together. At one meeting a problem can be outlined, work carried on by correspondence through the year, either informally or by a committee and the results brought together at the next meeting. Thus we may have team work. There is no competition between water companies in different cities nor rivalry for business and he who helps others will find that he is helping himself.

The underwriters in their reports on management of water companies always note whether the manager is connected with associations of water works men. Such connection is an indication of a progressive spirit. The intercourse with other superintendents at meetings and the reading of the proceedings of the association keep the superintendent out of a rut. The abstracts now published in the *JOURNAL* of the American Water Works Association will show where up-to-date information is obtainable.

Furnishing a satisfactory water supply to a municipality is a legitimate business, and the water company or water department should be so conducted as to show a profit.

The private water company is responsible to the stock holders and should pay interest on bonds and stock, while a municipal water department is responsible to the tax payers and should earn enough to cover all expenses. The details of the business vary in different places and cannot be indicated here, but the superintendent must either be a good accountant or must employ some one who is competent. He must plan his purchases and expenses to keep within his income. The company must depend on his judgement in making purchases and the difference in the cost of coal may mean the difference be-

tween profit and a loss. Economy may be obtained through new installations. The change from out-of-date un-economical machinery to up-to-date economical machinery may make a saving that will pay dividends. The judgment of the superintendent and manager must determine when changes are to be made.

The superintendent should be able to prepare budgets in a practical manner. They should be based on economical operations, but should be sufficient in amount to guarantee satisfactory operation.

The man who undertakes the responsibilities herein outlined ought to be well paid. A city should not employ a superintendent because he will work more cheaply than someone else who is more competent. Training and experience determine a man's qualifications. The salary should be made to fit the position.

The people, who are the real employers of the water works superintendent, employ the best physician available to look after the health of themselves and their children. They employ the best lawyers available to look after the titles of their property and to protect them in legal difficulties. They employ the best architect available to plan their houses or their factories. They should not hire, therefore, a cheap man to look after their water supply, on which in so many ways the health and welfare of the community depend.

The life of the water works superintendent is one of service. His financial rewards should be adequate, but will never be excessive. He cannot expect to become extremely wealthy. His calling is one of the most honorable and he should be proud of it.

Few monuments are built in honor of water works men. Yet every well planned, well operated water works is a monument to the man who successfully constructed and maintained it. I know of only one statue erected in honor of a water works builder, that for D'Arcy at Dijon, France. In that city grateful people have erected a statue and dedicated a park to the honor of the water works builder. Though such cases may be rare, yet in every community where a successful water supply has been obtained and operated, it serves as a monument to its faithful builder and operator.